DOCUMENT RESUME

ED 135 502 PS 009 149

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TITLE A Methodology for Observation of the Childbirth Environment.
PUB DATE 4 Sep 76
NOTE 10p.; Paper presented at the annual meeting of the American Psychological Association (84th, Washington, D. C., September 4, 1976)

EDRS PRICE MF-$0.83 HC-$1.67 Plus Postage.
DESCRIPTORS Fathers; Hospital Personnel; *Interaction Process Analysis; Interpersonal Relationship; *Measurement Instruments; Medical Treatment; *Mothers; Observation; *Perinatal Influences; *Pregnancy; Social Influences; *Test Construction
IDENTIFIERS *Childbirth

ABSTRACT

This paper describes the development of an instrument designed to obtain systematic data on the physical state, medical and social interactions of a woman in active labor. Observations were made of primiparous women who were accompanied in the labor room by the father. Women who had received childbirth training and those who had not were included in the study. The final observation system evolved from preliminary observations of 20 labors for which narrative records were written. A system of categories was developed to time-sample for one hour the woman's physical state and all interactions in the labor room involving her. The categories are organized into three areas: (1) the woman's physical state (contractions, breathing, body tension, vocalizations, body movement, body position); (2) the degree and nature proximity to the laboring woman); and (3) the content of conversations involving the woman (those concerned with the physical or emotional well-being of the woman; breathing; baby; the woman's interpersonal relationship with someone present; non-delivery matters; and medically-related topics concerning labor, pain, medication, and hospital procedures). In addition, the interaction between the woman and the obstetric staff is rated in terms of appropriateness of care to individual needs. (SB)

A Methodology for Observation of the Childbirth Environment

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Paper presented in a symposium on the Psychological Experience of Childbirth at the annual meeting of the American Psychological Association, Washington, D.C., September 4, 1976.

A Methodology for Observation of the Childbirth Environment

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Childbirth is recognized as a developmental event significant for all participants--mother, father, and newborn. It is well-documented that experiences during the course of labor and delivery affect the physiological status of the newborn (Standley, Soule, Copans & Duchowny, 1974; Yang, Zweig, Douthitt & Federman, 1976). There is also increasing recognition that the events of the perinatal period are critical to the emerging attachment between mother and infant (Kennell, Jerauld, Wolfe, Chesler, Kreger, McAlpine, Steffa & Klaus, 1974). A woman's feelings about a recent birth experience have been shown to influence her attitude toward her infant as well as her perception of her own competence as a caregiver (Clark & Affonso, 1976). Doering and Entwisle (1975) have reported a significant association between a mother's initial reaction to her newborn and her early patterns of caregiving. In addition, it has been suggested that the nature of the childbirth experience affects adjustments in marital and other family relationships (Doering & Entwisle, 1975).

With this emphasis on the psychological significance of childbirth and its importance in the evolution of the family, there has been no corresponding attention to objective, empirical assessments of the environment and experience of birth. Rather, research on childbirth has been restricted to a concern with the extent and intensity of physical pain experienced by the woman during labor and delivery. While it is recognized that there is great variation and unavoidable distortion in the report of childbirth pain after delivery (Davenport-Slack & Boylan, 1974; Javert & Hardy, 1951), data have primarily been obtained from mothers by retrospective interviews (Davenport-Slack & Boylan, 1974).

It is well-documented that primiparous women have longer and more difficult labors (Werts, Gardiner, Mitchell, Thompson & Oliver, 1965). In a recent study of 70 primiparous women, post-delivery interviews indicated that over half of the respondents evaluated the childbirth experience negatively (Levy & McGee, 1975). Although it has been suggested that isolation from social contact during labor increases a women's fear and tension (Bardon, 1974) which may affect her later feelings about the birth experience, to date there has been little effort to document the relationship between the woman's manifest tension or recollected pain and the events of labor and delivery.

Aspects of the childbirth setting which are related to the experience of pain have been suggested by the theory and practice of psychoprophylaxis or "natural childbirth," introduced in 1933 (R[illegible], 1944). Psychoprophylatic theory is based on the principle that adequate psychological, physical and educational preparation of the pregnant woman for the event of birth reduces her fear of childbirth and thereby elevates her threshold or tolerance for pain (Buxton, 1962). To foster relaxation it is advocated that the woman use a repertoire of breathing patterns specific to different phases of labor. The presence of persons who support the woman's decision to control pain without pharmacologic agents and who are trained to use techniques to maximize her physical comfort is seen as critical for the diminuition of tension during labor.

To begin to understand the relationship between these suggested dimensions of the childbirth environment and physical tension during labor, we developed an observational method to obtain systematic data on the physical state of a woman in active labor as well as on the medical and social interactions in which she is involved. Our interest was in observing women giving birth for the first time, who had entered the hospital at term with no previously identified complications during the course of pregnancy. We wanted

to observe during the mid-course of active labor when cervical dilatation was reported to be about five centimeters and prior to the administration of anesthesia. As we wanted to describe different forms of father participation and styles of couple interaction, we selected only primiparous women who were accompanied in the labor room by the prospective father. We saw couples who had participated in courses preparing them for the birth experience as well as untrained couples. Prior to data collection and soon after hospital admission, we obtained written consent to be observed from both members of the couple.

Other investigators have commented on the difficulties inherent in naturalistic research within the environment of a hospital obstetric ward (Leventhal & Sharp, 1965). In integrating ourselves as observer-psychologists into this medical system we had to become familiar with a variety of medical personnel and procedures as well as adapt to the intimate and at times crisis-like climate of the labor room. Moreover, to accomplish our task of direct observation of a specified group of women in a large, busy obstetric unit, we were dependent on daily cooperation from the hospital staff.

The process of instrument development extended over many months. We learned to read and interpret hospital records and monitoring equipment. We became familiar with obstetric staff and routines, as well as sensitive to the many variations which can be expressed during the course of individual labors. Our final observation system evolved from preliminary observations of 20 labors, during which we wrote narrative records focused on observable features of the woman's physical status, the identity and interactions of persons in the labor room, the range of possible medical interventions, and the themes of verbal conversations with the laboring woman. From these narrations, we developed a system of categories to time-sample for one hour

the woman's physical state and all interactions in the labor room which involved her. We used a stop-watch to indicate time-sampling cycles of 30-seconds for observation followed by 30-seconds for recording. Before formal data collection began, two observers simultaneously observed and recorded 10 labors, and inter-observer agreement computed on an interval-by-interval basis was 90% or higher for each category.

As indicated in Table 1, the categories of the observational system are organized into three areas of theoretical interest: (1) the woman's physical state, (2) the degree and nature of stimulus contact she experiences and (3) the content of conversations which involve the laboring woman. The focus of the observation session is the woman in labor. Her manifest level of tension or comfort is constantly sampled whether or not she is involved in any form of interaction. During every 30-second interval, several indices are used to define the woman's physical state. First, the presence or absence of a uterine contraction, the primary stress stimulus of labor (Leventhal & Sharp, 1965), is recorded. In addition, the woman's pattern of breathing and degree of muscular tension as expressed on her face and in her upper extremities are monitored. Vocalizations covering a range of affect from laughing to screaming as well as quiet or thrashing body movements are coded. Finally, body position is recorded in every interval.

The second group of categories concerns the extent and nature of the social and medical contacts which the woman experiences. In each 30-second interval, for the father, nurse, obstetrician, or any other person in the labor room, we record their proximity to and behavioral interactions with the laboring woman. Within the labor room we define three locations relative to the woman: face-to-face, near her bedside, and distant positions on the periphery of the room. In addition, we use eight categories to describe interpersonal contacts with the woman. Four categories refer primarily to

supportive social interactions: (1) converse indicates verbal interaction involving the woman; (2) touch refers to physical contact, such as massaging or caressing, which is not an instrumental part of a medical procedure; (3) comfort item describes interactions involving objects which aid in comforting the woman, such as providing a cloth for her forehead or an extra blanket; and (4) breathing indicates the modeling of relaxation breathing patterns. Four additional variables describe interactions which are medically-oriented. These include: (1) all nursing services instrumental to maintenance of patient care such as taking a blood pressure; (2) vaginal examination; (3) the administration of medication; and (4) interactions which focus on the fetal-monitoring equipment which is routinely used in this obstetric unit.

For each interval in which the woman is involved in conversation, we code the informational content of the exchange using nine exhaustive categories. Five categories describe supportive or relatively neutral conversation themes: well-being indicates concern for the physical or emotional comfort of the woman; baby refers to dialogue about the infant as a person, rather than references to fetal condition; relationship describes conversations which focus on the interpersonal relationship between the woman and another person present; breathing indicates talking about the use of patterned respiration for relaxation purposes; and non-delivery indicates all conversations which do not relate to the woman or the labor setting. In addition, conversations exclusively about medically-related topics are coded using four variables: labor, pain, medication, and hospital procedures.

Following the period of observation, ratings are made of qualitative aspects of social interactions which involve the laboring woman. We are interested in the relationship between the woman's physical tension and (1) the extent of physical contact between mother and father, (2) the degree of

mutual participation and responsivity between the prospective parents, and (3) the effectiveness of the couple's interactions in alleviating the woman's physical distress. In addition, we rate the effectiveness of interactions between the obstetric staff and the woman in terms of appropriateness of care to individual physical and emotional needs. For example, a responsive, effective nurse may perform only the necessary nursing tasks when the father and mother are coping effectively and supportively together. With another couple, however, a nurse may appropriately assume the primary interactive and supportive role with the laboring woman. Effectiveness of physician care is based on the extent to which the obstetrician shares information and expresses consideration for the mother-father relationship.

Psychology is experiencing a renewed interest in naturalistic research methods (Willems & Raush, 1969), particularly as applied across the life-span and throughout a range of life-settings (Baltes & Schaie, 1973). Our observational method has been shown to be a feasible and reliable instrument for obtaining provocative naturalistic data in a seldomly-researched setting, the environment of birth. Through a lengthy and innovative process of instrument development, we have designed a procedure which is neither intrusive nor disruptive to hospital routine or parent's needs and is sensitive to the numerous variations in the social and medical events surrounding childbirth. The comprehensive information provided by this observational method on the relationship between observed physical tension and contextual variables of the labor room may begin to sharpen current speculations about childbirth as a significant event in the development of both parents and child.

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Table 1

OBSERVATION CATEGORIES

Physical State of the Laboring Woman

1. Contraction
   - Contraction
   - Resting
   - Both

2. Breathing
   - Regular
   - Irregular
   - Deep
   - Shallow
   - Pant
   - Push

3. Body Tension
   - Relaxed
   - Tense
   - Very Tense

4. Vocalizations
   - Laugh or Smile
   - Cry
   - Scream
   - Moan

5. Body Movement
   - Movement
   - Stable

6. Body Position
   - Back
   - Side
   - Sit

Stimulus Contact Between the Laboring Woman and Father, Nurse, Obstetrician, and Others

1. Behavioral Events Involving the Laboring Woman
   - Converse
   - Touch
   - Comfort Item
   - Breathing
   - Maintenance
   - Exam
   - Medication
   - Fetal Monitor

2. Proximity
   - Face-to-Face
   - Near
   - Distant

Content of Conversations

1. Well-Being
2. Breathing
3. Baby
4. Relationship
5. Non-delivery
6. Labor
7. Pain
8. Medication
9. Procedures

RATING SCALES

1. Physical Intimacy of Mother-Father Relationship
2. Quality of Mother-Father Relationship
3. Effectiveness of Mother-Father System in Comforting Mother
4. Effectiveness of Nursing Care
5. Effectiveness of Physician Care